December 3, 2007

Mr. Ronnie L. Gardner, Manager
Site Operations and Regulatory Affairs
AREVA NP Inc.
3315 Old Forrest Road
P.O. Box 10935
Lynchburg, VA, 24506-0935

SUBJECT: NRC AUDIT REPORT FOR THE AREVA NP INC. (AREVA) EVOLUTIONARY PRESSURIZED REACTOR (EPR) DESIGN CERTIFICATION APPLICATION REVIEW

Dear Mr. Gardner:

On October 15-19, 2007, U.S. Nuclear Regulatory Commission (NRC) staff conducted an audit of the AREVA NP Inc. (AREVA) Evolutionary Pressurized Reactor (EPR) design certification (DC) application at the AREVA facility in Lynchburg, Virginia. The enclosed audit report presents the details of that activity.

The NRC auditors reviewed the implementation of selected portions of the AREVA application and its contractor quality assurance programs as related to the EPR DC application, and reviewed quality activities performed to support the EPR DC application development. Additionally, the NRC auditors assessed the completeness of the EPR application using the guidance in Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants,” dated June 2007. The NRC audit team did not identify any issues with the quality activities associated with EPR DC application development. The NRC audit team did identify seven issues associated with the completeness review of the draft EPR DC application that should be addressed by AREVA prior to the completion of the EPR DC application. These issues are described in the attached audit report as audit response requests (ARRs), and you are requested to respond to these ARRs before or as part of your EPR DC application submittal. At the time of the audit, the Final Safety Analysis Report (FSAR) for the EPR DC application was in a draft form but still on course for your scheduled submittal date.

In accordance with Section 2.390, “Public Inspections, Exemptions, Requests for Withholding,” of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 2, “Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," a copy of this letter, and its enclosures will be made available electronically for public inspection in the NRC Public Document Room (PDR) or from the NRC’s document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

If you have any questions, please contact me at gxt2@nrc.gov or (301) 415-3361.

Sincerely,

/RA/

Getachew Tesfaye, Sr. Project Manager
EPR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Project No. 733

Enclosure: Audit Report No. PROJ0733-2007-001

cc w/encl: U.S. EPR Service List

If you have any questions, please contact me at gxt2@nrc.gov or (301) 415-3361.

Sincerely,

/RA/

Getachew Tesfaye, Sr. Project Manager
EPR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Project No. 733

Enclosure: Audit Report No. PROJ0733-2007-001

cc w/encl: U.S. EPR Service List

DISTRIBUTION:
E-mail:
NRO_DNRL
JPeralta
KKavanagh
PCoates
GTesfaye
JColaccino

*Audit Report from CQVP incorporated with no significant changes
ADAMS Accession No.: ML073370036

OFFICE	PM:DNRL/NARP	LA: DNRL/NARP	BC:CQVP/DCIP	BC:DNRL/NARP
NAME	GTesfaye	PCoates	JPeralta*	JColaccino
DATE	12/ 03 /07	12/ 03 /07	12/ 03 /07	12/ 03 /07

Official Record Copy

DC AREVA - EPR Mailing List

cc:

Mr. Glenn H. Archinoff
AECL Technologies
481 North Frederick Avenue
Suite 405
Gaithersburg, MD 20877

Marty Bowling
NUMARK Project Manager
86 WestBay Drive
Kilmarnock, VA 22482

Ms. Michele Boyd
Legislative Director
Energy Program
Public Citizens Critical Mass Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

W. Craig Conklin, Director
Chemical and Nuclear Preparedness &
Protection Division (CNPPD)
Office of Infrastructure Protection
Department of Homeland Security
Washington, DC 20528

Mr. Marvin Fertel
Senior Vice President
and Chief Nuclear Officer
Nuclear Energy Institute
1776 I Street, NW
Suite 400
Washington, DC 20006-3708

Mr. Ray Ganthner
AREVA, Framatome ANP, Inc.
3315 Old Forest Road
P.O. Box 10935
Lynchburg, VA 24506-0935

Mr. Gary Wright, Director
Division of Nuclear Facility Safety
Illinois Emergency Management Agency
1035 Outer Park Drive
Springfield, IL 62704

Mr. Paul Gaukler
Pillsbury, Winthrop, Shaw, Pittman
2300 N Street, NW
Washington, DC 20037

Dr. Charles L. King
Licensing Manager, IRIS Project
Westinghouse Electric Company
Science and Technology Department
20 International Drive
Windsor, CT 06095

Ms. Sherry McFaden
Framatome NP, Inc.
3315 Old Forest Road, OF-16
Lynchburg, VA 24501

Vanessa E. Quinn, Acting Director
Technological Hazards Division
National Preparedness Directorate
Federal Emergency Management Agency
500 C Street, NW
Washington, DC 20472

Mr. Steve Seitz
AREVA
100 Dean Road
East Lyme, CT 06333

Mr. Robert E. Sweeney
IBEX ESI
4641 Montgomery Avenue
Suite 350
Bethesda, MD 20814

Email

APH@NEI.org (Adrian Heymer)
awc@nei.org (Anne W. Cottingham)
bennettS2@bv.com (Steve A. Bennett)
bob.brown@ge.com (Robert E. Brown)
BrinkmCB@westinghouse.com (Charles Brinkman)
carey.fleming@constellation.com (Carey Fleming)
chris.maslak@ge.com (Chris Maslak)
cwaltman@roe.com (C. Waltman)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
dlochbaum@UCSUSA.org (David Lochbaum)
erg-xl@cox.net (Eddie R. Grant)
frankq@hursttech.com (Frank Quinn)
gcesare@enercon.com (Guy Cesare)
greshaja@westinghouse.com (James Gresham)
james.beard@gene.ge.com (James Beard)
jcurtiss@winston.com (Jim Curtiss)
jgutierrez@morganlewis.com (Jay M. Gutierrez)
jim.riccio@wdc.greenpeace.org (James Riccio)
JJD1@nrc.gov (John Donohue)
JJNesrsta@cpsenergy.com (James J. Nesrsta)
john.o'neil@pillsburylaw.com (John O'Neil)
Joseph.savage@ge.com (Joseph Savage)
Joseph_Hegner@dom.com (Joseph Hegner)
junichi_uchiyama@mnes-us.com (Junichi Uchiyama)
KSutton@morganlewis.com (Kathryn M. Sutton)
kwaugh@impact-net.org (Kenneth O. Waugh)
lynchs@gao.gov (Sarah Lynch - Meeting Notices Only)
Margaret.Bennet@dom.com (Margaret Bennet)
maria.webb@pillsburylaw.com (Maria Webb)
mark.beaumont@wsms.com (Mark Beaumont)
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)
media@nei.org (Scott Peterson)
mike_moran@fpl.com (Mike Moran)
mwetterhahn@winston.com (M. Wetterhahn)
nirsnet@nirs.org (Michael Mariotte)
patriciaL.campbell@ge.com (Patricia L. Campbell)
paul.gaukler@pillsburylaw.com (Paul Gaukler)
Paul@beyondnuclear.org (Paul Gunter)
pshastings@duke-energy.com (Peter Hastings)
RJB@NEI.org (Russell Bell)
RKTemple@cpsenergy.com (R.K. Temple)
roberta.swain@ge.com (Roberta Swain)
rod.krich@constellation.com (Mr. Rod Krich)
ronald.hagen@eia.doe.gov (Ronald Hagen)
Ronda.Daflucas@areva.com (Ronda Daflucas)
sandra.sloan@areva.com (Sandra Sloan)

sfrantz@morganlewis.com (Stephen P. Frantz)
steven.hucik@ge.com (Steven Hucik)
tkkibler@scana.com (Tria Kibler)
tom.miller@hq.doe.gov (Tom Miller)
trsmith@winston.com (Tyson Smith)
VictorB@bv.com (Bill Victor)
vijukrp@westinghouse.com (Ronald P. Vijuk)
waraksre@westinghouse.com (Rosemarie E. Waraks)
wayne.marquino@ge.com (Wayne Marquino)
whorin@winston.com (W. Horin)

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NEW REACTORS

Audit Report No:	PROJ0733-2007-001
Organization:	AREVA NP Inc.
Applicant Contacts:	Ronda Pederson Deputy Licensing Manager AREVA NP Inc. 3315 Old Forrest Road P.O. Box 10935 Lynchburg, VA, 24506-0935
Nuclear Industry:	AREVA NP Inc., designs, builds, and starts up nuclear steam supply systems and supplies fuel, engineering services, and replacement components to U.S. nuclear utilities. AREVA NP Inc. is one of the three major regions under AREVA NP. The other major regions include France (AREVA NP SAS) and Germany (AREVA NP GmbH).
Audit Dates:	October 15 through 19, 2007
Auditors:	Kerri A. Kavanagh, Lead Inspector, CQVP/DCIP/NRO Milton Concepcion-Robles, Inspector, CQVP/DCIP/NRO Andy DuBouchet, Inspector, CQVP/DCIP/NRO Michael Morgan, Inspector, CQVB/DCIP/NRO Frank Talbot, Inspector, CQVP/DCIP/NRO Getachew Tesfaye, Lead Project Manager, DNRL/NRO Larry Burkhart, Senior Project Manager, DNRL/NRO Mike Canova, Project Manager, DNRL/NRO John Smith, Project Manager, DNRL/NRO Peter Hearn, Senior Project Manager, DNRL/NRO Jack Donohue, Project Manager, DNRL/NRO John Rycyna, Project Manager, DNRL/NRO Jerry Wilson, Senior Policy Analyst, DNRL/NRO Norbert Carte, I&C Technical Reviewer, ICE1/DE/NRO Thomas Cheng, Senior Geotechnical Engineer, RGS/DSER/NRO Walton Jensen, Senior Reactor Engineer, SPCV/DSRA/NRO Theresa Clark, Reliability and Risk Engineer, SPLA/DSRA/NRO Hanh Phan, Reliability and Risk Engineer, SPLA/DSRA/NRO Shanlai Lu, Senior Reactor Systems Engineer, SRSB/DSRA/NRO Bret Tegeler, Structural Engineer, SEB1/DE/NRO Jean-Claude Dehmel, Health Physicist, CHPB/DCIP/NRO Charles Hinson, Health Physicist, CHPB/DCIP/NRO
NRC Management	Joseph Colaccino, Chief
Participant:	EPR Projects Branch, DNRL
Approved by:	Juan Peralta, Chief

Enclosure

Quality and Vendor Branch 1
Division of Construction Inspection & Operational Programs
Office of New Reactors

1.0 AUDIT SUMMARY

The purpose of this audit was to verify that if quality activities were adequately established, documented, and implemented to support the development of the design certification (DC) application for the AREVA NP Inc. (AREVA) Evolutionary Pressurized Reactor (EPR). An additional purpose of the audit was to assess the completeness of the EPR DC application using the guidance in Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants,” June 2007.

The audit was conducted at the AREVA facility in Lynchburg, Virginia. The audit bases were:

- Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Part 50 of Title 10 of the Code of Federal Regulations (Appendix B),

- Part 21, "Reporting of Defects and Noncompliance,” to Part 50 of Title 10 of the Code of Federal Regulations (Part 21) and,

- Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)."

- 10 CFR 50.9, “Completeness and Accuracy of Information.”

During this audit, the NRC audit team identified several issues associated with the completeness review of the draft EPR DC application that should be addressed by AREVA prior to the completion of the EPR DC application. These issues are described in section 3.11 of this audit report as audit response requests (ARRs). At the time of the audit, the Final Safety Analysis Report (FSAR) for the EPR DC application was in a draft form. The audit team reviewed approximately 11,000 pages of the draft EPR DC application.

2.0 STATUS OF PREVIOUS AUDITS

There were no previous NRC audits in support of the AREVA EPR DC application.

3.0 AUDIT OBSERVATIONS AND OTHER COMMENTS

3.1 QUALITY ASSURANCE PROGRAMS

a. Audit Scope

The NRC audit team reviewed the quality assurance (QA) program requirements and the implementation process for AREVA EPR DC activities. Specifically, the NRC audit team reviewed the quality assurance program manuals that govern the implementation of quality activities performed for EPR DC activities by AREVA and its contractor.

b. Observations

The NRC audit team reviewed the AREVA, and its contractor's policies governing quality assurance programs to assure those policies provided an adequate description of the implementation requirements consistent with the applicable requirements of Appendix B.

(i) AREVA EPR Quality Assurance Program Description

Revision 1 of the AREVA NP Inc. ANP-10266A, "Quality Assurance Plan (QAP) for Design Certification of the US EPR" topical report was approved by the NRC by letter dated April 26, 2007. ANP-10266A describes the QAP for the design certification of commercial nuclear operating plants, specifically the U.S. EPR, and for products and services supplied by AREVA under nuclear safety related criteria. Revision 4 of the AREVA 56-5058967-04, "EPR Design Certification Project Quality Assurance Plan," dated May 10, 2007, defines the quality assurance requirements and methodologies that are used to control, perform, document, and assess quality related activities associated with the EPR design certification project. Process controls are established utilizing the existing AREVA Quality Management Manual (QMM), 56-5015885, current revision, the AREVA ASME Section III and XI Quality Assurance Manual (QAM), 56-1151178, current revision, and the AREVA ANP-10266A, Revision 1. However, the current scope of work for the EPR DC application project does not include ASME Code certified specification or design reports. Therefore, the AREVA QAM is not applicable to the project at this time.

(ii) Bechtel Quality Assurance Program

Revision 4 of the Bechtel "US EPR-Constellation Project Bechtel Job Nos. 25140 and 25237 Quality Assurance Program Plan (QAPP)," dated July 31, 2007, establishes the quality program interface between the Bechtel Nuclear Quality Assurance Manual (NQAM), Revision 4, dated November 1, 2002, the AREVA NP, Inc. EPR QAP, and the UniStar Nuclear Topical Report Number UN-TR-06-001-A, "Quality Assurance Program Description, UniStar Nuclear QAPD," Revision 0, dated March 31, 2007. The QAPP is based on the NQAM, and in cases such as QA program requirements, organization, design control, and QA records, the QAPP simply refers to the NQAM. The QA program policies contained in the NQAM were designed to meet the requirements of Appendix B. The NQAM was developed for the full scope of Bechtel's services, while the QAPP specifically identified QA policies applicable to Bechtel's scope of work associated with the US EPR Design Certification (DC) application, Combined License (COL) application, and US EPR design and site-specific engineering. The QAPP specified the QA policies and requirements applicable to the project, consistent with Bechtel's scope of work. Bechtel implemented modifications to the QA policies as appropriate to reflect unique project or SCE&G requirements.

c. Conclusions

The NRC audit team concluded that the QA program requirements for quality activities to support the AREVA EPR DC application were consistent with the requirements of Appendix B. The NRC audit team also concluded that the applicant's and/or its sub-supplier's QA program requirements were appropriately translated into implementing procedures to support the EPR DC application. The NRC audit team did not identify any issues in this area requiring additional action by the applicant prior to completion of the EPR DC application.

3.2 DESIGN CONTROL PROCESS

a. Audit Scope

The NRC audit team reviewed the implementation of the AREVA design control processes for the EPR DC application. Specifically, the NRC audit team reviewed the policies and procedures governing the implementation of the AREVA design control process and reviewed selected draft completed portions of the FSAR, which are in various stages of review by AREVA.

b. Observations

The NRC audit team reviewed the AREVA policies and procedures governing the design process to assure those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion III, "Design Control," of Appendix B.

b.1 Design Control Policy and Procedures

Appendix A, “QA Program Implementing Policies, Procedures, and Instructions,” of AREVA ANP-10266A lists the QA procedures that implement the AREVA QAP. The NRC audit team reviewed a subset of the design control and design verification procedures listed in Appendix A of the QAP to provide reasonable assurance that the procedures implement the QA requirements documented in Section 3.0, “Design Control,” of the AREVA QAP.

AREVA Administrative Procedure 0405-04, “System Design Requirements Document,” Revision 1, dated September 28, 2007, controls the preparation of system design requirement documents (SDRDs) for the AREVA EPR. Attachment 1 of Procedure 0405-04 lists 35 possible design requirement inputs to be considered in developing the SDRD, including the basic functions of each structure, system and component (SSC), performance requirements such as capacity, rating and system output, and codes, standards and regulatory requirements, including applicable issues and addenda.

AREVA Administrative Procedure 0405-09, “System Description Documents,” Revision 1, dated August 25, 2006, controls the preparation of system description documents (SDDs) for the AREVA EPR. Appendix 1 of Procedure 0405-09 lists 33 possible design requirement inputs to be considered in developing the SDD, including the basic functions of SSCs, performance requirements such as capacity, rating and system output, and codes and standards, regulatory requirements and commitments, or responses to federal, state and local regulations.

AREVA Administrative Procedure 0402-01, “Preparing and Processing Framatome ANP, Inc. Calculations,” Revision 37, dated April 29, 2005, controls the preparation and processing of Framatome (FANP) calculation packages. Section 7.3.1 of Procedure 0402-01 documents requirements for the preparation, revision, and design verification of AREVA calculations. Table 1 lists the sections to be included in an AREVA calculation.

AREVA Administrative Procedure 0412-67, “Processing Technical Documents from Suppliers and Customers,” Revision 29, dated March 21, 2005, controls the processing of supplier technical documents that require AREVA approval. Section 7.0 of Procedure 0412-67 requires that AREVA prepare Document Comment Form (DCF) 21069 for each supplier technical document reviewed. Section 7.0 also requires that the review status be assigned to each technical document.

b.2 Implementation of Design Controls

The NRC audit team reviewed a sample of AREVA technical documents and calculations for conformance with the above QA design control and design verification procedures. The NRC audit team also reviewed a calculation that Bechtel prepared for AREVA.

The following technical documents and calculations were reviewed:

- "System Design Requirements, Document ID 115, Serial No. 5064298, Revision No. 02, for the US EPR Reactor Coolant System," dated April 12, 2006. This document was reviewed for conformance to the requirements of Attachment 1 of Procedure 0405-04.

- "US EPR System Description Reactor Coolant System, Document ID 15, Serial No. 9026671, Revision No. 000, for Contract No. 9000034 EPR Design Certification Project," dated April 12, 2006. This document was reviewed for conformance to the requirements of Appendix 1 of Procedure 0405-09.

- Calculation, "US EPR RCS & Surge Line Piping Stress Analysis, Document Identifier 32-9048915-00," Revision 0, dated July 7, 2007, for conformance to the requirements of Section 7.3.1 and Table 1 of Procedure 0402-01.

- "Technical Document, U.S. EPR System Design Requirements Document for the Safety Injection System and Residual Heat Removal System, Document ID 115, Serial No. 5065436, Revision No. 003, for Contract 9000034, EPR Design Certification Project," dated September 5, 2006. This document was reviewed for conformance to the requirements of Attachment 1 of Procedure 0405-04.

- "Technical Document, U.S. EPR System Description Document for the Safety Injection System and Residual Heat Removal System, Document ID 15, Serial No. 9018600, Revision No. 001, for Contract 9000034, EPR Design Certification Project," dated September 5, 2006. This document was reviewed for conformance to the requirements of Appendix 1 of Procedure 0405-09.

- Calculation, "US EPR Safety Injection Systems Analysis for Design Certification, Document Identifier 32-9017765-000," Revision 0, dated September 20, 2006. This document was reviewed for conformance to the requirements of Section 7.3.1 and Table 1 of Procedure 0402-01.

- Calculation, "US EPR Safety Injection Systems Analysis for Design Certification, Document Identifier 32-9017765-000," Revision 1, dated December 12, 2006. This document was reviewed for conformance to the requirements of Section 7.3.1 and Table 1 of Procedure 0402-01.

- "Technical Document, System Design Requirements Document for EPR Standard Plant Structures, Document ID 115, Serial No. 9005578, Revision No. 003, for Contract 9000034", dated September 5, 2006. This document was reviewed for conformance to the requirements of Attachment 1 of Procedure 0405-04.

- "Technical Document, System Description Document for EPR Nuclear Island Structural System, Document ID 15, Serial No. 5072657, Revision No. 001, for Contract 9000034,

EPR Design Certification Project." This document was reviewed for conformance to the requirements of Appendix 1 of Procedure 0405-09.

- Calculation, "US EPR Standard Plant Structural Loads - Seismic Loads, Document Identifier 32-9011967-002," Revision 2, dated August 7, 2007. This document was reviewed for conformance to the requirements of Section 7.3.1 and Table 1 of Procedure 0402-01.

- Bechtel Calculation No. 25140-102-S0C-SS90-00018, "Nuclear Auxiliary Building Tornado Missile Evaluation," Revision 1, dated September 10, 2007. This document was reviewed for conformance to the requirements of Section 7.0 of Procedure 0412-67.

c. Conclusions

The NRC audit team concluded that the design control process requirements have been appropriately translated into implementing procedures and, for those activities reviewed by the NRC audit team, implemented as required by the applicant's and its sub-supplier's procedures to support the AREVA EPR DC development program. The NRC audit team also concluded, based on the sample reviewed by the NRC audit team, that AREVA prepared the technical documents and calculations in accordance with the implementing procedures. The NRC audit team did not identify any issue requiring additional action by the applicant prior to completion of the EPR DC application.

3.3 PROCUREMENT DOCUMENT CONTROL

a. Audit Scope

The NRC audit team reviewed AREVA and Bechtel procedural controls for assuring those applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in procurement documents. The scope of the evaluation included review of AREVA and Bechtel procedures, specific requirements of contractor quality assurance programs, purchase orders, quality vendor lists, quality and technical requirements, and other related documents.

b. Observations

The NRC audit team reviewed the AREVA and Bechtel policies and procedures governing the procurement document control processes to assure those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion IV, "Procurement Document Control," of Appendix B.

b.1 Policies and Procedures for Procurement Document Control

Section 4 of the AREVA ANP-10266A QAP and Section 1 of the Bechtel NQAM provide general and other specific requirements for controlling procurement documents. Procurement documents are controlled to ensure that requirements, including the basis of acceptance of items or services, are fully and correctly specified. Technical and quality requirements may be detailed in the procurement document or in referenced documents, which are referenced by revision and applicable parts. Specific technical requirements include design specifications and design documents that identify and define essential characteristics, special processes, and instructions for shipping and handling.

Specific quality requirements in both the AREVA QAP and Bechtel NQAM include identification of inspections and tests, designated hold points, right of access to subcontractor facilities and records, and QA programs to be documented and applied by subcontractors that cover the applicable requirements of either AREVA or Bechtel QA programs. This includes the following requirements:

- 10 CFR Part 21 requirements
- Requirements for records and other documentation
- Retention period requirements
- Nonconformances to be submitted for review
- Provisions for extending procurement contract requirements to lower tier sub-contractors

b.2 AREVA Purchase Orders for Services

The NRC audit team reviewed AREVA Purchase Orders (POs) related to activities associated with the preparation of the AREVA EPR DC application and determined that the POs were prepared and processed in accordance with the AREVA QAP. Prior to contract authorization, AREVA evaluated and approved each listed company's QAP for the specific scope of activities contracted under the PO. Services procured under these contracts are classified as "safety-related," and each requires these services to be provided either under the AREVA Appendix B QAP or the supplier's equivalent, "of similar quality," QAP. Quality and technical requirements are invoked upon each sub-contractor. The NRC audit team reviewed the following POs, their associated Purchasing Authorizations (Pas), and any associated "change to initial request" PAs:

- PO #180984; Jeumont Indusrie, dated September 28, 2007. Associated PA #83-9026112-000, dated January 31, 2007. Jeumont Indusrie provided reactor coolant pump (RCP) pressure, temperature and flow specifications, and RCP calculations.

- PO #179120; Bechtel Power Corporation, dated August 23, 2006. Associated PA #83-9026013-000, dated August 3, 2006. Bechtel performed some structural calculations.

- PO #182051; Paul C. Rizzo Associates, Incorporated, dated November 30, 2006. Associated PA #83-9037082-000, dated January 31, 2007. Paul C. Rizzo Associations provided soil sampling.

The NRC audit team confirmed that quality requirements are invoked. These requirements include issuance of a certificate of conformance (C of C) upon contract completion and attesting that contract activities and documents conform to the technical and quality requirements of the contract. The reporting requirements of 10 CFR Part 21 are imposed on activities conducted pursuant to the contract and they are extended to all sub-tier contractors and suppliers.

The NRC audit team confirmed that the quality and applicable technical requirements of the AREVA contract are extended through AREVA purchase documents to all sub-tier suppliers and contractors. Each listed supplier's quality assurance organization shall provide quality surveillances and auditing of internal and sub-tier activities, and they will provide reports of these oversight activities to AREVA. Each listed supplier retains access rights to sub-contractor facilities and records for inspection. Under the contract, each listed supplier retains the

responsibility for dedication of all items and services performed under the contract. Each listed supplier will provide dedication plans for any commercial grade dedication of safety-related services/items, and these plans are to be submitted to AREVA for review and approval.

The NRC audit team determined that the technical requirements are specific as to the detailed information to be supplied in each section of the FSAR chapter of the DC application, and each contract provides an extensive list of regulatory and industry documents applicable to services provided under each of the contracts.

c. Conclusions

The NRC audit team concluded that the procurement document control process requirements have been appropriately translated into implementing procedures and, for those activities reviewed by the NRC audit team, implemented as required by the applicant's procedures to support the AREVA EPR DC development program. The NRC audit team did not identify any issues in this area requiring additional action by the applicant prior to completion of the DC.

3.4 DOCUMENT CONTROL

a. Audit Scope

The NRC audit team reviewed the implementation of the AREVA and Bechtel processes of document control for the EPR DC application development. Specifically, the NRC audit team reviewed policies and procedures governing their document control processes to verify the overall extent and effectiveness of their programs. The NRC audit team verified that the quality-related documents were developed, reviewed, approved, issued, used, and revised under an established program.

b. Observations

The NRC audit team reviewed the AREVA and Bechtel policies and procedures governing the document control processes to assure those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion VI, "Document Control," of Appendix B.

b.1 Policies and Procedures for Document Control

AREVA ANP-10266A states, in part, that the document control program defines the system of controls for the preparation, review, approval, revision, distribution, and use of documents that prescribe activities affecting quality. The QAP further states, in part, that the AREVA procedures and instructions detail the methods for preparation, review, approval, revision, distribution, and use of documents. In addition, the AREVA procedures will govern the coordination and control of interface documents. Interface documents may include those between engineering disciplines/projects, affiliate companies, and suppliers or customers.

The Bechtel NQAM states, in part, that the Bechtel document control program will identify the requirements and responsibilities for the control of documents to be used in activities affecting the contracted project. The Bechtel NQAM further states, in part, that the Bechtel policy for document control applies to the control of documents to be used during performance of activities affecting quality within Bechtel's scope of work.

b.2 Implementation of Document Control Programs

The NRC audit team reviewed the design packages described in Section 3.2 of this audit report to verify that those documents had been reviewed, approved, issued, and revised consistent with procedures. The NRC audit team also reviewed the following AREVA and Bechtel documents to determine if controlled documents, revisions of controlled documents, distribution of such documents and performance of associated document control systems were performed in accordance with NQA-1 and ANSI N18.7 requirements:

- AREVA Administrative Procedure 1303-07, "Control of Corporate Policies and Implementing Documents," Revision 31, dated June 2007, Sections 4.1.17, 4.2, 4.3.3, 4.4.3, and 4.5

- Bechtel NQAM, Revision 4, Sections 5, 6.1, and 6.2

The NRC audit team did not identify any deficiencies in this area.

The NRC audit team noted that AREVA currently uses two different electronic systems for document control. AREVA QA-related documents are controlled using the AREVA "Documentum" computer system while AREVA engineering-related documents are controlled using the AREVA "PoPs" (Policy and Procedures System) computer system. Both systems are compatible with each other and both have been used successfully for control of documentation in other AREVA projects/activities.

The NRC audit team confirmed that "Documentum" and "PoPs" track all design support information and provide interfaces of information between different sections/groups in AREVA and the AREVA subsidiary organizations. When information that affects one section/group is updated, distribution of such changes is presented to all affected sections. In addition, when documents are prepared and are readied for comments, the documents are sent to applicants for review via their respective electronic system. Full access to each of the systems and full control of documents entered and tracked within the system are limited to a small number of AREVA higher management and AREVA document control and AREVA quality assurance personnel. All other AREVA personnel are restricted to "read-only" access.

The use of these computerized systems to maintain proper identification, adequacy, and completeness of controlled documents was verified by the NRC audit team via observation of these systems. In addition, the NRC audit team verified that the systems provided adequate control and interface between AREVA's sections/groups.

c. Conclusions

The NRC audit team concluded that the document control process requirements have been appropriately translated into implementing procedures and, for those activities reviewed by the NRC audit team, implemented as required by the applicant's procedures to support the AREVA EPR DC development program. The NRC audit team did not identify any issues in this area requiring additional action by the applicant prior to completion of the EPR DC application.

3.5 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

a. Audit Scope

The NRC audit team reviewed the implementation of the AREVA and Bechtel processes of controlling purchased material, equipment, and services for the EPR DC application development program. Specifically, the NRC audit team reviewed the policies and procedures governing the process to verify the quality of suppliers providing engineering services for EPR DC application development activities.

b. Observations

The NRC audit team reviewed the AREVA and Bechtel policies and procedures governing the control of design engineering services and activities for the AREVA EPR DC to assure that those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B.

b.1 Policies and Procedures for Control of Purchased Material, Equipment and Services

AREVA ANP-10266A QAP states, in part, that the AREVA program provides measures for evaluating prospective suppliers and selecting only qualified suppliers. In addition, the AREVA program provides for the auditing and evaluation of suppliers to ensure that qualified suppliers continue to provide acceptable products and services. The AREVA QAP further states that the scope of procurement is to be limited to engineering, design, and testing services as well as the procurement of safety-related software.

The AREVA QA program currently provides for the following acceptance actions:

- Source Verifications
- Receipt Inspections
- Post-Installation Tests
- Initial & Ongoing Reviews of Supplier Documentation

The AREVA reviews of supplier and sub-supplier documentation includes review of C of Cs. In using such a review, AREVA will be able to ensure that procurement, inspection, and test requirements have been satisfied before relying on an item/service to perform its intended safety function. Specific to this audit, the C of Cs reviewed by the NRC audit team included:

- AREVA NP SAS Certificate of Conformance; NQ/2007.028; Dated October 2, 2007

- AREVA NP GmbH Certificate of Conformance; NEQM-G; Dated January 15, 2007

AREVA ANP-10266A, Section 7, further states that dedication of commercial-grade items and services for safety-related applications may be procured from suppliers if evaluations are performed by AREVA technical and QA organizations. AREVA Administrative Procedure 1719-22, “Quality Assurance Audits of Suppliers,” Revision 22, dated July 2006, states that such evaluations are performed to determine the suitability of the item or service. During the evaluation, the critical characteristics of the item or service will be determined and documented and AREVA will establish special methods to provide assurance that the item/service specified is the item/service received. When required, “special quality verification methods” could include inspections, tests, commercial grade surveys, and/or evaluations of the AREVA designated supplier.

AREVA Administrative Procedure (AP) 1212-12, "Purchasing Documents", Revision 32 dated December 2006, provides guidance on the control of sub-contractor activities. AREVA AP 1719-22, "Quality Assurance Audits of Suppliers", Revision 22, dated July 2006, provides the requirements for periodic auditing of an accepted supplier and is used to document verification and acceptance of purchased services. Acceptance of contracted services will be documented when the final package is sent to the applicant/client.

Bechtel NQAM states, in part, that it is Bechtel policy to select suppliers who have or who can demonstrate the ability to furnish services that comply with the requirements of Bechtel's services procurement documents. Bechtel NQAM further states, in part, that prior to any selection of a supplier of services, the supplier must meet the following technical and quality requirements:

- A determination by Bechtel Engineering that the source is responsive to the technical requirements of a particular specification.
- A determination by Bechtel Engineering and Bechtel Quality Services that the supplier's Quality Assurance (QA) program is capable of meeting specified requirements.

Bechtel NQAM also states, in part, that the supplier's QA program will be determined to be acceptable for selection based upon the following elements:

- QA program manuals previously submitted and evaluated.
- A review (by Bechtel) of the QA manuals being submitted for a specific procurement.
- Evaluation of the supplier's performance on previous procurements.
- A quality performance history of the supplier from other sources.
- A source audit performed previously or in connection with the specific procurement.

b.2 Review of Activities

The NRC audit team reviewed the AREVA and Bechtel QA programs and implementing procedures that govern the AREVA control of purchased engineering services for the AREVA EPR DC program. The NRC audit team verified that the guidance was consistent with the requirements for Control of Purchased Material, Equipment, and Services as described in 10 CFR 50 Appendix B, Criterion VII. The NRC audit team verified that both the AREVA and Bechtel processes adequately specified the requirements for procurement of material, equipment and services [including the appropriate application of AREVA invoked technical, engineering, and quality requirements in their POs] and their PAs.

The NRC audit team verified that AREVA had included an appropriate level of quality requirements in their POs and PAs, in addition to the quality requirements needed for their suppliers and sub-suppliers. Specific POs/PAs reviewed are identified in section 3.3 of this audit report. The NRC audit team did not identify any deficiencies in this area.

The NRC audit team reviewed the AREVA control of purchased materials, equipments and services process, policy guidelines, and implementing procedures applied to the AREVA EPR DC project. For development of EPR DC, AREVA contracted services for some design activities, including calculations.

The NRC audit team reviewed the AREVA control of documentation received by sub-contractors. The NRC audit team was also able to verify through discussions with the AREVA Quality Assurance staff that proper review of documents produced by the sub-contractors is performed before the documents are used. AREVA-performed audits reviewed by the NRC audit team, specific to procurement and control of services, included:

- Framatome ANP Fuel America Audit Report 111-29; Dated November 2005
- Bechtel Power Corporation Audit Report 549-1; Dated January 2006
- AREVA NP SAS Audit Report 555-1; Dated March 2006
- Jeumont Indusrie SA Audit Report 319-4; Dated February 2006

The NRC audit team found that, based on the nature of the services procured and the design control process applied by AREVA for the development of the AREVA EPR DC application, any unacceptable services would be captured during the progress of the development of the EPR DC application.

c. Conclusions

The NRC audit team concluded that the control of material, equipment, and services process requirements, including the oversight of suppliers, has been appropriately translated into implementing procedures and, for those activities reviewed by the NRC audit team, implemented as required by the applicant's procedures to support the AREVA EPR DC application development program. The NRC audit team did not identify any issues in this area requiring additional action by the applicant prior to completion of the EPR DC application.

3.6 CORRECTIVE ACTIONS

a. Audit Scope

The NRC audit team reviewed the corrective action process associated with the preparation of the AREVA EPR DC application. Specifically, the NRC audit team reviewed the policies and controlling procedures associated with the project, and reviewed the status of all corrective actions, which are predominately identified through the audits and surveillances performed in support of the EPR DC application development.

b. Observations

The NRC audit team reviewed the AREVA policies and procedures governing the corrective action process to assure those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion XVI, "Corrective Action," of Appendix B.

b.1 Policies and Procedures for Corrective Actions

AREVA Administrative Procedure No. 1717-06, "Corrective Action Program - WebCAP," Revision 2, dated July 15, 2007, establishes the process for reporting, tracking, correcting conditions adverse to quality and significant conditions adverse to quality, and those events/conditions as directed by management, determining root cause, generic impact, and preventing recurrence. Additionally, the procedure establishes the means for the identification and resolution of near misses, customer identified problems, areas for improvement, and complaints. This procedure details the electronic process of identifying and documenting apparent conditions adverse to quality that fall under the scope of the AREVA Quality Program, investigating and correcting those adverse conditions, and closing Condition Reports (CRs) upon completion of corrective action.

Condition Reports are the documents used by AREVA to identify an issue, report actions taken to evaluate and resolve apparent conditions adverse to quality, and track required actions through completion. Section 4.0 of the procedure describes the general requirements for implementation of the corrective action process, including: (1) identification of the potential condition adverse to quality; (2) screening assignment to determine significance level; (3) initial 10 CFR Part 21 screening; (4) investigation and evaluation documentation results; (5) documented recommended actions to preclude recurrence; (6) impact on related internal or external work activities or processes; and (7) identification when further Deviation Determinations are required as part of the Part 21 evaluation process. The CR and any associated documents are retained as a quality record.

The CR issue owner assigns a significance level for review activities based upon several determining criteria. Significance Level 1 conditions receive a Root Cause investigation. Significance Level 2 conditions receive an apparent cause analysis to validate that the condition is not a Significance Level 1 event, and Significance Level 3 conditions receive a probable cause investigation to address the immediate issue. These significance levels are subject to management review and approval.

b.2 Corrective Actions Associated with the EPR Design Certification Project

The NRC audit team reviewed AREVA corrective action status reports for two groups, the Nuclear Engineering Business Unit and the New Plants Development Unit. Several files for completed and in process corrective actions were reviewed, including the following:

- CR 2007-1875, dated April 20, 2007, which described an arithmetic error in the overall total volume of the solid waste system.
- CR 2007-43, dated January 4, 2007, which described an error found in one of the approved design drawings generated by Isodraft, a Computer Aided-Design (CAD) tool used to generate design drawings.
- CR 2005-4603, dated October 25, 2005, which described issues regarding Fuel America documents used as input to the EPR project.

The NRC audit team determined these CRs were adequately addressed; the reports were found to adequately document the issues; evaluations were adequately documented; corrective actions were determined to appropriately address the identified conditions, and closure and verification were adequately documented. As of the date of the status reports, all corrective

action reports had been closed or were in the process of closure verification by the respective unit.

c. Conclusions

The NRC audit team concluded that the requirements for corrective actions have been appropriately translated into implementing procedures and, for those activities reviewed by the NRC audit team, implemented as required by the applicant=s procedures to support the AREVA EPR DC application development program. The NRC audit team did not identify any issues requiring additional action by the applicant prior to completion of the EPR DC application.

3.7 QUALITY ASSURANCE RECORDS

a. Audit Scope

The NRC audit team reviewed QA program record controls to verify that the QA program provides for the preparation of sufficient records to furnish documentary evidence of activities affecting quality. Specifically, the NRC audit team verified that the QA program provides for the administration, identification, receipt, storage, preservation, safekeeping, retrieval, and disposition of all records. Also, the audit team verified that the procedures and policies were developed to adequately implement the requirements for record retention.

b. Observations

The NRC audit team reviewed the AREVA policies and procedures governing quality assurance records to assure those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion XVII, "Quality Assurance Records," of Appendix B.

b.1 Policies and Procedures for Quality Assurance Records

AREVA ANP-10266A, Section 3.17.1, follows the guidance in NRC Standard Review Plan (SRP) 17.5, paragraph II.Q, for establishing the necessary measures to ensure sufficient records for items and activities affecting quality are generated, identified, retained, maintained, and retrievable. AREVA Corporate Policy Procedure (CPP) 0502, “Records Retention Policy,” Revision 4, dated July 31, 2006, applies to all documents and records generated by AREVA employees in the regular course of business for all purposes and uses and in all media (i.e., hard copy, electronic, microfilm, etc). CPP-0502 states that all lifetime records are considered QA safety-related records. Per CPP 0502, AREVA defines lifetime records as those which:

- Would be of significant value in demonstrating capability for safe operation.
- Would be of significant value in maintaining, recording, repairing, or modifying an
l tem.
- Would be of significant value in determining the course the course of an accident or malfunction of an item.
- Would provide baseline data for in-service inspection.

AREVA “Records Management Program Manual (1E1)”, Revision 20, dated May 22, 2006, describes how AREVA QA records are identified, prepared, collected, authenticated, controlled, stored, preserved, retrieved and disposed of in the course of AREVA work on the EPR DC application development project. Section 2.2.1, Contract Records, states, in part, that records

are subdivided into contract technical records, contract administrative (i.e., non technical records, non contract records, personal records, purchasing records, lifetime records, nonpermanent records, and vital records). In Section 3.0 of 1E1, AREVA describes storage, preservation, and safekeeping of QA records. For fire protection purposes, AREVA requires that vital records be protected by duplication and storing in a secured off site facility or by providing extraordinary protection such as special handling and storage.

b.2 Review of Quality Assurance Records

The NRC audit team reviewed the implementation of the AREVA quality record control program and found that all AREVA QA records are retained in an electronic system that is accessible at several different AREVA offices. Per the requirements of 1E1, contract technical records include safety as well as non-safety-related records and are identified with like document identifiers for a given record category. The record itself or the release mechanism for a record indicates its safety or non-safety status and is recorded in a database which has the capability of generating a report listing only those records with safety-related implications.

The NRC audit team determined that AREVA's records are classified as either lifetime or nonpermanent. Consistent with the AREVA quality record control program, all safety-related records are considered QA records and stored as lifetime records.

The NRC audit team confirmed that the records database is generated consistent with the policies of 1E1 and resides in the Documentum Webtop USDOCP repository which became effective on September 9, 2005. Any document that meets the conditions for a record becomes a record immediately after is completed, approved and formally released into the records system for use. Records management applies the proprietary access control list within the system that limits access to the document. Access to QA records stored in Documentum pertaining to the EPR DC is restricted to authorized users on the AREVA EPR DC project. AREVA maintains a number of storage facilities that are used to store AREVA QA records. Working copies of QA records are stored in Lynchburg, Virginia, Charlotte; North Carolina, or Marlborough Massachusetts. Vital QA records are stored in an underground storage facility operated by Iron Mountain facility in Charlotte, North Carolina.

For electronic media QA records, the NRC audit team confirmed that once the electronic media has been verified, the original records are returned to the originator, retained by Records Management, or destroyed in compliance with Corporate Policy 0502. Additionally, based on discussions with the AREVA staff, QA records are copied to optical disks and archived into the Iron Mountain storage facility.

c. Conclusions

The NRC audit team concluded that the QA record control requirements have been appropriately translated into implementing procedures and, for those activities reviewed by the NRC audit team, implemented as required by the applicant=s procedures to support the AREVA EPR DC application development program. The NRC audit team did not identify any issues requiring additional action by the applicant prior to completion of the EPR DC application.

3.8 AUDITS

a. Audit Scope

The NRC audit team reviewed a representative sample of audits conducted by AREVA to determine the effectiveness of the audit process and timely completion of audits. Audit findings reported by the audits were reviewed for any adverse significance they may have on the results of the EPR DC application. Corrective actions to resolve deficiencies identified by the findings and observations were reviewed for reasonableness and timely resolution.

b. Observations

The NRC audit team reviewed the AREVA policies and procedures governing the audit process to assure those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion XVIII, "Audits," of Appendix B.

b.1 Audit Policies and Procedures

AREVA Administrative Procedure No. 1719-21, “Quality Assurance Audits of Internal Activities,” Revision 21, dated January 28, 2005, establishes the methods to be used in preparing for and conducting QA audits of internal activities, including audits of field activities. Section 8 provides a detailed description of the audit process for assuring implementation of quality activities consistent with the QA plan for the EPR project. The procedure also provides requirements for the selection, training, and qualification of audit personnel and responsibilities for carrying out audits once each calendar year.

AREVA Procedure 1719-22, establishes the methods to be used in preparing for and conducting QA audits of AREVA suppliers of ASME Code items, safety-related products and services, and commercial-grade items and services whose end will be safety-related. The procedure provides responsibilities for auditors, a process for the evaluation of the quality acceptability of a supplier, periodic evaluation of each safety-related supplier listed on the approved supplier list (ASL), and requirements to include new suppliers on the ASL based on QA input and audit results. Section 8 provides a detailed description of the process for conducting audits to ensure the requirements of the QA Plan for the EPR project are properly implemented.

AREVA Administrative Procedure No. 1721-01, “QE Surveillance of Engineering Activities,” Revision 4, dated February 23, 2007, establishes the methods to be used in preparing for and conducting quality engineering surveillances of internal engineering activities under the AREVA QA program. The procedure states that internal quality engineering surveillances are conducted to evaluate the quality of selected work to applicable requirements. These surveillances are used to supplement the QA internal audit program. The procedure provides general requirements for the scheduling, preparation, performance, reporting of surveillances, and follow-up actions, as required.

b.2 Internal and External Audit Activities

The NRC audit team selected a representative sample of the audits associated with the activities performed during the preparation of the EPR Design Certification application. The NRC audit team reviewed both external and internal audits, including the following:

- An audit of Bechtel Power Corporation (BPC), Audit No. 549-1, conducted from January 9-12, 2006. This audit verified supplier’s compliance with the quality requirements. The audit examined documents and records associated with the quality activities affecting the BPC QA program.

- A QE Internal Surveillance conducted from August 13-17, 2006. This was a limited scope surveillance focused on the Design Change Request (DCR) process and verification of required updates to affected documents.

- A QA Internal Surveillance conducted from June 19-30, 2006. This surveillance verified compliance with AREVA implementing procedures for selected design documents associated with the EPR DC Project.

- A QE Internal Surveillance conducted from September 10-11, 2007. This is an ongoing internal surveillance that reviews the Design Control Document production process. The surveillance is performed to verify consistency between the FSAR and supporting documents and control and closure of open items that affect the FSAR.

The NRC audit team noted that these audits and surveillances identified a number of issues that were administrative in nature and did not materially affect the quality of the EPR DC application. The NRC audit team also reviewed the corrective action files for these findings and found the resolution and timeliness of the corrective actions to be in accordance with project requirements. The NRC audit team confirmed that all findings had been closed at the time of the NRC audit.

c. Conclusions

The NRC audit team concluded that the audit process requirements have been appropriately translated into implementing procedures and, for those activities reviewed by the NRC audit team, implemented as applicable by the applicant. Audits, surveillances, and surveys conducted by the applicant were satisfactory, and resolution of identified deficiencies were adequately documented, tracked, and resolved in a timely manner. The NRC audit team did not identify any issues in this area requiring additional action by the applicant prior to completion of the EPR DC application.

3.9 TRAINING AND QUALIFICATION

a. Audit Scope

The NRC audit team reviewed the QA program to verify that it provided for the indoctrination and training of personnel performing activities affecting quality to assure that proficiency was achieved and maintained. Specifically, the NRC audit team verified that AREVA adequately implemented and maintained personnel training and qualification processes.

b. Observations

The NRC audit team reviewed the AREVA policies and procedures governing training and qualification to assure those guidelines provided an adequate description of the process and implementation consistent with the requirements of Criterion II, "Quality Assurance Program," of Appendix B.

b.1 Policies and Procedures for Training and Qualification

AREVA Engineering Guideline (EG)-01, “Plant U.S. Training Program,” Revision 1, dated

March 1, 2006, details the QA training for AREVA employees and contractors. AREVA Administrative Procedure (AP) 17022-22, Revision 26, dated April 10, 2006, provides the training requirements for AREVA employees and contractors. Procedure 17022-22 requires planning, scheduling, executing, and documenting personnel training of AREVA employees and contractors. The procedure also requires training and mentoring to AREVA employees to the extent necessary for the employee to achieve a level of proficiency satisfactory to be compliant with QA program requirements.

b.2 Review of Training Activities and Records

The NRC audit team reviewed the AREVA NPE Work Group Master Training Matrix, Revision 1, for QA and Part 21 procedures that are part of the AREVA training program. The NRC audit team also sampled two training records for an AREVA employee and a contractor employee. Both Personnel Training Report (PTR) records were documented under the ePTR document list. The NRC audit team found that the employees were trained to the AREVA Quality Assurance Plan (QAP) for Design Certification of the EPR, the AREVA QMM, the AREVA Corporate Quality Management Directives, and AREVA sub-tier QA procedures used to train AREVA employees and contractors on the procedures used to implement the 18 criteria of Appendix B to 10 CFR 50. Each employee is also required to read a large number of deviation letters related to use of AREVA procedures requiring updates or new issues reflecting problems with implementing aspects of these procedures. These issues are tracked by AREVA until the next annual update of the procedure resolves the issue. The ePTR records track AREVA employees and contractor employees completed training on these deviations letters concerning updates needed in AREVA implementing procedures.

Consistent with the AREVA training requirements for the EPR DC application project, the NRC audit team found that two employees were trained to the AREVA Corporate Policy 401, "Reporting of Defects and Noncompliances Concerning Substantial Safety Hazards," Revision 18, dated September 8, 2006, and AREVA Administrative Procedure 1707-01, "Evaluation and Reporting of Safety Significant Issues," Revision 35, dated March 30, 2007. The team did not identify any deficiencies with the training requirements for AREVA employees.

c. Conclusions

The NRC audit team concluded that the training process requirements reviewed by the NRC audit team were implemented as applicable by the applicant. The NRC audit team did not identify any issues in this area requiring additional action by the applicant prior to completion of the EPR DC application.

3.10 10 CFR PART 21 IMPLEMENTATION

a. Audit Scope

The NRC audit team reviewed the process for implementing 10 CFR Part 21 regulations for reporting defects and noncompliances. Additionally, the NRC audit team reviewed AREVA's imposition of Part 21 on its contractors. These reviews were performed to determine whether requirements for quality-related activities, consistent with Part 21, were being adequately implemented.

b. Observations

b.1 Policies and Procedures for Part 21 Controls

AREVA Corporate Policy 0401 provides the AREVA policy for establishing and implementing procedures for promptly reporting defects or failures to comply to the NRC. Section 4.3 provides guidance to assure that suppliers are informed of the applicability of Part 21 and report any vendor notifications concerning deviations or defects to the appropriate individuals.

AREVA Procedure 1707-01 establishes procedures and responsibilities to ensure compliance with and timely execution of Part 21 requirements. Section 8 provides the requirements for completing AREVA Form 22668, "Deviation Determination," and Form 22669, "Defect Determination." These forms are used to document determinations made by AREVA regarding the existence of a potential deviation or a defect. The procedure contains guidance for the notification of affected customers (including AREVA's regulatory affairs and quality groups, and the NRC) if a deviation or defect is found in a basic component. These determinations are required to be attached to the respective CR in WebCAP.

b.2 10 CFR Part 21 Program

The NRC audit team reviewed implementing procedures and policy guidelines governing the AREVA Part 21 program to verify that the guidance was consistent with the requirements described in Part 21. The NRC audit team verified that the AREVA process adequately outlined the requirements for identification, evaluation, and reporting of significant conditions adverse to quality. The NRC audit team observed that the postings requirements of Section 21.6 of Part 21 were met and that a notice was placed in a conspicuous place at the Lynchburg office. In addition, the NRC audit team reviewed a sample of procurement documents for basic components to verify that the provisions of Part 21 were included. The NRC inspectors found them to be in accordance with the provisions of the regulation.

Nonconformances and corrective actions are processed through the AREVA corrective action program, as discussed in section 3.6 of this audit report. The NRC audit team reviewed a sample of CRs and root cause investigation reports to determine whether AREVA personnel had considered the evaluation for potential reportability of defects and failures to comply. After discussions with AREVA personnel, the NRC audit team found that AREVA had determined that none of the deficiencies identified during the EPR Design Certification application development had reached the threshold of a "substantial safety hazard."

c. Conclusions

The NRC audit team concluded that the Part 21 requirements have been appropriately translated into implementing procedures and, for those activities reviewed by the audit team, implemented as required by the applicant=s procedures to support the AREVA EPR DC application development programs. The NRC audit team did not identify any issues requiring additional action by the applicant prior to completion of the EPR DC application.

3.11 CONSISTENCY WITH REGULATORY GUIDE 1.206, "COMBINED LICENSE APPLICATIONS FOR NUCLEAR POWER PLANTS," JUNE 2007

a. Audit Scope

The NRC audit team assessed the completeness of the AREVA EPR DC application. Each section of the draft EPR DC FSAR and Tier 1 information was compared to the guidance in

Regulatory Guide 1.206 and the requirements of 10 CFR 52.47. A gap in information was defined as information not present in the FSAR, Tier 1, or on the AREVA open item list (items to be completed prior to the EPR DC application submittal).

b. Observations

The intent of the NRC assessment was to provide the potential applicant, AREVA, and the staff with insight into the completeness of the EPR DC application consistent with 10 CFR 50.9. Requirements AREVA plans to submit the application on or before December 14, 2007. As a result of the NRC audit, the NRC identified seven gaps in information in the EPR DC FSAR. These gaps are identified as ARRs and are discussed in detail below. The following table presents the results of these reviews:

FSAR Section	10CFR52.47 Section	Results/Observations	Conclusions	Note No.	Reviewer
Chapter 1	(a)(1) (a)(2)(i) (a)(2)(iii) (a)(8) (a)(21) (c)(2) (a)(7) (a)(22) (a)(9)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	LBurkhart GTesfaye
Chapter 2	(a)(1) (a)(3)(ii)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	TCheng
Chapter 3	(a)(2)(ii) (a)(3)(i) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(13) (a)(20)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	BTegeler/MCanova

FSAR Section	10CFR52.47 Section	Results/Observations	Conclusions	Note No.	Reviewer
Chapter 4	(a)(2) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(15)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	LBurkhart
Chapter 5	(a)(2) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(14)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☐ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	J Rycyna
Chapter 6	(a)(2) (a)(2)(iv) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(12)	☐ R.G. 1.206 Content present ☒ Potential Impact issues (See Notes)	☐ No Apparent impact on Acceptance Review ☒ Issue(s) for resolution identified	1,2	WJenson/MCanova
Chapter 7	(a)(2) (a)(3)(ii) (a)(3)(iii) (a)(4)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	N Carte
Chapter 8	(a)(2) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(16)	☐ R.G. 1.206 Content present ☒ Potential Impact issues (See Notes)	☐ No Apparent impact on Acceptance Review ☒ Issue(s) for resolution identified	1,3,4,5	JSmith
Chapter 9	(a)(2) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(18) (a)(17)	☐ R.G. 1.206 Content present ☒ Potential Impact issues (See Notes)	☐ No Apparent impact on Acceptance Review ☒ Issue(s) for resolution identified	1,6	PHearn

FSAR Section	10CFR52.47 Section	Results/Observations	Conclusions	Note No.	Reviewer
Chapter 10	(a)(2) (a)(3)(ii) (a)(3)(iii) (a)(4)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	PHearn
Chapter 11	(a)(2), (a)(2)(i) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(10) (a)(6)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	CHinson / J-CDehmel / LBurkhart
Chapter 12	(a)(5) (a)(3)(ii) (a)(3)(iii) (a)(4) (a)(6)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	CHinson / J-CDehmel / LBurkhart
Chapter 13	(c)(1) 52.48	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue(s) for resolution identified	1	JDonohue
Chapter 14	(a)(24) (a)(25) (a)(26) (b)(1)	☐ R.G. 1.206 Content present ☒ Potential Impact issues (See Notes)	☐ No Apparent impact on Acceptance Review ☒ Issue(s) for resolution identified	1,7	MConcepcion

FSAR Section	10CFR52.47 Section	Results/Observations	Conclusions	Note No.	Reviewer
Chapter 15	(a)(1) (a)(2) (a)(3)(ii) (a)(4) (a)(15)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue for resolution identified	1	SLu
Chapter 16	(a)(11)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue for resolution identified	1	PHearn
Chapter 17	(a)(19)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue for resolution identified	1	KKavanagh
Chapter 18	(a)(8) 50.34(f)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue for resolution identified	1	TClark
Chapter 19	(a)(23) (a)(27)	☒ R.G. 1.206 Content present ☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue for resolution identified	1	HPhan
Env. Report (SAMDA)	(b)(2)	☐ Potential Impact issues (See Notes)	☐ No Apparent impact on Acceptance Review ☐ Issue for resolution identified	None	JWilson
ITAAC	(b)(1)	☒ Potential Impact issues (See Notes)	☐ No Apparent impact on Acceptance Review ☒ Issue for resolution identified	1,8	JColaccino JWilson
DAC		☐ Potential Impact issues (See Notes)	☒ No Apparent impact on Acceptance Review ☐ Issue for resolution identified	None	JColaccino JWilson

NOTES:

1. Issues identified by the staff are either tracked by AREVA on the AREVA open item list to be addressed before the application is submitted or can be resolved by request for additional information during the review process.

2. Sections 6.2 and 6.3 of the draft FSAR did not include the In-containment Refueling Water Storage Tank (IRWST) temperature vs. time evaluation. This evaluation is required by RG 1.206 since the IRWST water is injected into the reactor coolant system (RCS) as part of the emergency core cooling system (ECCS) in the event of a large break loss of coolant accident (LOCA). This is identified as ARR-001.

3. Section C.I.8.3.1.1 of RG 1.206, “AC Power Systems Description” states that “… descriptive information should include functional logic diagrams, electrical single-line diagrams, tables, physical arrangement drawings, and electrical schematics, describing the design of the electrical distribution systems, including grounding and lightning protection plan drawings.” The draft FSAR did not contain the functional logic diagrams, physical arrangement drawings, electrical schematics, and lightning protection plan drawings. This is identified as ARR-002.

4. Section C.I.8.3.1.1 (4) of RG 1.206, "System Capacity and Capability" states that “…[t]he applicant should describe how the onsite power system satisfies the requirements of GDC 18 and the guidance in RGs 1.9 and 1.118 and describe the design’s built-in capability to permit integral testing of onsite power systems on a periodic basis when the reactor is in operation.” The draft FSAR states that the system has this capability but does not describe how or what those specific capabilities are. The FSAR needs to include the appropriate level of detail to describe the specific capabilities or how the design permits integral testing of the onsite power systems on a periodic basis when the reactor is in operation. This is identified as ARR-003.

5. Section C.I.8.3.1.3 of RG 1.206, “Power Quality Limits” indicates the need for “…analyses and any underlying assumptions used to demonstrate the acceptance criteria for the digital control and protection systems, including protective devices for motors and generators.” The draft FSAR does not include the analyses and underlying assumptions used to demonstrate the acceptance criteria for digital control and protection systems including protective devices for generators. This is identified as ARR-004.

6. Section C.I.9.2.5 of RG 1.206, “Ultimate Heat Sink [UHS]” identifies several items that need to be included in the FSAR to meet the regulations, including design bases information, system description, safety evaluation, inspection and testing requirements, and instrumentation requirements. The draft FSAR does not contain the format and content described in the RG. The staff understands that AREVA is still evaluating whether to include the UHS in the scope of the design certificate application or not. AREVA needs to determine whether the UHS is within scope of the DC or not and modify the FSAR appropriately. This is identified as ARR-005.

7. Section C.I.14.2.2 of RG 1.206, “Organization and Staffing” indicates the need for inclusion of a description of organizational authorities and responsibilities including staff participation in each major test phase of the program, and experience and qualification of supervisory personnel responsible for managing, developing, or conducting the

program. An overall discussion regarding organizational and staffing responsibilities was not included in the draft FSAR.

Section C.I.14.2.9 of RG 1.206, "Trial Use of Plant Operating and Emergency Procedures" states that "[the FSAR] should identify the specific operator training to be conducted as part of the use-testing during the special low-power testing program related to the resolution of TMI Action Plan Item I.G.1, as described in … NUREG-0660 … NUREG-0694 … NUREG-0737 …" This discussion was not included in the draft FSAR.

Section C.I.14.2.11 of RG 1.206, "Test Program Schedule" states that the FSAR "should consider the following five guidance components for test program scheduling and sequencing: (1) The applicant should allow at least 9 months to conduct preoperational testing. (2) The applicant should allow at least 3 months to conduct startup testing, including fuel loading, low-power tests, and power-ascension tests. (3) Overlapping test program schedules (for multiunit sites) should not result in significant divisions of responsibilities or dilutions of the staff provided to implement the test program. (4) The sequential schedule for individual startup tests should establish, insofar as practicable, that test requirements should be completed prior to exceeding 25-percent power for all plant SSCs that are relied upon to prevent, limit, or mitigate the consequences of postulated accidents. The schedule should establish that, insofar as practicable, testing is accomplished as early in the test program as feasible and that the safety of the plant not be entirely dependent on the performance of untested systems, components, or features. (5) Approved test procedures should be in a form suitable for review by regulatory inspectors at least 60 days prior to their intended use or at least 60 days prior to fuel loading for fuel loading and startup test procedures. Licensees should provide timely notification to the NRC of changes in approved test procedures that have been made available for NRC review. An overall discussion regarding this matter was not included in the draft FSAR.

These three examples of information not included in the draft FSAR are identified as ARR-06.

8. 10 CFR 52.47(b)(1) requires that an application for design certification must contain proposed inspections, tests, analyses, and acceptance criteria (ITAAC). ITAAC was not included for the turbine building and the access building in the draft application package. At the time of the audit, AREVA was evaluating whether the turbine building was within the scope of the design certification. AREVA needs to determine whether the turbine building is within scope of the DC or not and modify the application package appropriately. AREVA had also agreed that an ITAAC for the access building should be provided. This is identified as ARR-007.

c. Conclusions

The NRC audit team concluded that the FSAR chapters and Tier 1 of the AREVA EPR DC application are consistent with the format and content prescribed in RG 1.206, with the exceptions noted above. These exceptions are identified as ARRs and are related to compliance with RG 1.206 and 10 CFR 52.47. These ARRs are to be addressed and responded to by AREVA before or as part of the EPR DC application submittal.

4.0 ENTRANCE AND EXIT MEETINGS

In the entrance meeting on October 15, 2007, the NRC audit team discussed the scope of the audit, outlined the areas to be reviewed, and established interfaces with AREVA=s staff and management involved in the EPR DC application development. In the exit meeting on October 19, 2007, the NRC audit team discussed the audit activities conducted during the audit with representatives of AREVA's management and staff.

5.0 PARTIAL LIST OF PERSONS CONTACTED

Name	Position	Organization
Ronda Pederson	Regulatory Affairs	AREVA NP*
Jim Linville	Regulatory Affairs	AREVA NP*
George Pannell	Regulatory Affairs	AREVA NP***
Vic Fregonese	Engineering Manager – Electrical / I&C	AREVA NP*
Kevin Connell	Engineering Manager – Mechanical	AREVA NP*
Russ Wells	Advisory Engineer	AREVA NP*
Toney Mathews	Project Manager	AREVA NP*
Mary Beth Baker	Technical Integration Project Manager	AREVA NP*
Paul Baker	Manager COLA – US EPR Deployment	AREVA NP*
Darrell Gardner	Regulatory Affairs	AREVA NP*
Mike Carpenter	Manager, Nuclear Island Engineering	AREVA NP*
Charles Tally	Manager, Engineering Integration	AREVA NP*
Emily Mayhew	Vice President, US Region Quality	AREVA NP*
Tara Werner	Manager Quality Audits and Programs	AREVA NP*
Hassan Hassan	Senior Technical Consultant	AREVA NP***
Farshid Shahrokhi	Regulatory Affairs	AREVA NP*
Mark Burzynski	Regulatory Affairs	AREVA NP*
Martin Parece	Manager, Technical Integration	AREVA NP*
Jeffrey S. Tucker	Manager, New Reactor Core Eng	AREVA NP*
Ronnie Gardner	Manager, Site Operations & Reg Affairs	AREVA NP*
Bob Salm	Supervisor, Safety Analyses	AREVA NP*
Ken Conti	Manager, Quality Management Systems	AREVA NP*
Michael Saniuk	Project Assurance Lead	AREVA NP*
Todd Oswald	Manager Civil / Structural Engineering	AREVA NP*
Tom Sliva	EPR DC Project Manager	AREVA NP*
Mike L. Morgan	Quality Manager, NPD/ Mech Comp.	AREVA NP*
Gerry van Noordenner	Quality Assurance Auditor	UniStar*
Brian McIntyre	Project Manager	AREVA NP*
Cassie Hagan	Brand Manager	AREVA NP*
Janice Morris	Engineer Ard - COLA	AREVA NP***
Kathy Bennett	Admin Assistant	AREVA NP***
Kelly Abbott	Admin Assistant	AREVA NP *
Calvin Coles	Principle Technical Specialists	AREVA NP*
John Trotter	Senior Engineer	AREVA NP*
Jim Kay	Licensing Engineering Supervisor	AREVA NP*
Dave Ruff	Program Manager	AREVA NP***

Name	Position	Organization
Matthew Snyder	Advisory Engineer	AREVA NP***
Robert Gurdal	Engineer	AREVA NP***
Teresa Weinmeister	Comms	AREVA NP***
Chris Lewis	Supervisory Engineer	AREVA NP***
John Midkiff III	Project Engineer	AREVA NP***
Christy White	Mechanical Engineer	AREVA NP***
Joe Delrue	Advisory Engineer Technical Integration	AREVA NP***
Wanda Fraley	New Plant Engineer	AREVA NP***
Gloria Witt	Manager People Development	AREVA NP***
James Williams	Electrical Engineer	AREVA NP***
Thomas Edwards	Principal Engineer	AREVA NP***
Daniel Ulevich	Engineer	AREVA NP***
Nancy Norton	Engineer	AREVA NP***
Jim Bartleman	Manager Corrective Actions	AREVA NP***
Amy Napior	NPE Training	AREVA NP***
Paul Ulmler	Manager OPE NSSS Mechanical Eng	AREVA NP***
Victor Montalbano	Manager US Quality Operations	AREVA NP***
Christine Creammer	Attorney	AREVA NP***
Laurie Harris	Manager Treasury	AREVA NP***
Jeff Weiss	Risk Analyst	AREVA NP***
Majed Natour	Principal Engineer	AREVA NP***
George Beam	Senior VP Nuclear Services	AREVA NP***
Cecilia Robinson	Admin	AREVA NP***
Kim Borchardt	NPE Training Coordinator	AREVA NP***
Marcy DiSanto	Communications Specialists	AREVA NP***
Pedro Salas	Technical Consultant	AREVA NP*
Thomas Lotz	Manager PWR Core Eng – Fuel America	AREVA NP*
Sandra Sloan	Manage r NPD Regulatory Affairs	AREVA NP*
Ben Stitt	Supervisor Engineer Safety	AREVA NP*
David Cofflin	Supervisory Engineer – Nuclear Island	AREVA NP***
Dennis Gottuso	Manager Fuel Product Strategy	AREVA NP***
R. Affocter	VP New Plants Deployment	AREVA NP**
P. Myers	VP New Plants Engineering	AREVA NP**
Ray Ganthner	Sr. VP New Plants Deployment	AREVA NP*
Bernie Copsey	Manager, Engineering Support	AREVA NP**
Gayle Elliott	Manager, Licensing	AREVA NP**
David Shafer	Asst. Manager, Licensing	Ameren UE Callaway**
Pedro Perez	Supervisory Engineer - RAD	AREVA NP**
Russell Matney	Supervisory Engineer - NPD	AREVA NP**
Ray Lewis	Consultant	AREVA NP**
Alfred Mcass II	Manager, NI Systems Engineering	AREVA NP**
Martin Owens	Project Manager COLA	AREVA NP*

* Attended entrance and exit meeting
** Attended exit meeting
*** Attended entrance meeting